

ACRONYMS AND ABBREVIATIONS

ACC	Arizona Corporation Commission
ADMMR	Arizona Department of Mines and Mineral Resources
ADWR	Arizona Department of Water Resources
ADEQ	Arizona Department of Environmental Quality
ADOC	Arizona Department of Commerce
ALERT	Automated Local Evaluation in Real Time
ALRIS	Arizona Land Resource Information System
AMA	Active Management Area
APS	Arizona Public Service
ARS	Arizona Revised Statute
ASDM	Arizona-Sonora Desert Museum
ASLD	Arizona State Land Department
AWBA	Arizona Water Banking Authority
AWPF	Arizona Water Protection Fund
AZDA	Arizona Department of Agriculture
AZGF	Arizona Game and Fish Department
AZMET	Arizona Meteorological Network
BIA	United States Bureau of Indian Affairs
BCPA	Boulder Canyon Project Act
BECC	Border Environment Cooperation Commission
BLM	United States Bureau of Land Management
CAP	Central Arizona Project
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
CLIMAS	Climate Assessment for the Southwest
CNWR	Cibola National Wildlife Refuge
CRIT	Colorado River Indian Tribes
CVCA	Cibola Valley Conservation Area
CVIDD	Cibola Valley Irrigation and Drainage District
DES	Arizona Department of Economic Security
DOD	United States Department of Defense
DWID	Domestic Water Improvement District
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FR	Federal Register
GIS	Geographic Information System
gpcd	Gallons per capita per day
gpm	Gallons per minute
GSF	Groundwater Savings Facility
GWSI	Groundwater Site Inventory System
HIA	Historically Irrigated Acres
HSR	Hydrographic Survey Report
HUC	Hydrologic Unit Code

HVID	Harquahala Valley Irrigation District
ID	Irrigation District
IDD	Irrigation and Drainage District
IGA	Intergovernmental Agreement
INA	Irrigation Non-Expansion Area
INWR	Imperial National Wildlife Refuge
IOPP	Inadvertent Overrun and Payback Policy
ITCA	Intertribal Council of Arizona
LCR MSCP	Lower Colorado River Multi-Species Conservation Program
LDIG	Local Drought Impact Group
LUST	Leaking Underground Storage Tank
MCWA	Mohave County Water Authority
maf	Million acre-feet
mg/L	milligrams per liter
M&I	Municipal and Industrial
MOD	Main Outlet Drain
MODE	Main Outlet Drain Extension
NHD	National Hydrography Dataset
NIB	Northerly International Boundary
NOAA	National Oceanic and Atmospheric Administration
NPL	National Priorities List (Superfund)
NPS	United States National Park Service
NRCD	Natural Resources Conservation District
NRCS	Natural Resources Conservation Service
NWIS	National Water Information System
NWR	National Wildlife Refuge
NWS	National Weather Service
Pan ET	Pan Evapotranspiration
PCE	Tetrachloroethene
PDO	Pacific Decadal Oscillation
RCRA	Resource Conservation and Recovery Act
ROD	Record of Decision
SB	Senate Bill
SIB	Southerly International Boundary
SNOTEL	SNOpack TELemetry
TCE	Trichloroethylene
TDS	Total Dissolved Solids
TOUA	Tohono O'odham Utility Authority
USBOR	United States Bureau of Reclamation
USDA	United States Department of Agriculture
USDOI	United States Department of Interior
USF	Underground Storage Facility
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

VRP	Voluntary Remediation Program
WIFA	Water Infrastructure Finance Authority
WC&DD	Water Conservation and Drainage District
WDA	Water Delivery Agreement
WMIDD	Wellton-Mohawk Irrigation and Drainage District
WQARF	Water Quality Assurance Revolving Fund
WRCC	Western Regional Climate Center
WWTF	Wastewater Treatment Facility
WWTP	Wastewater Treatment Plant
YCWUA	Yuma County Water Users Association
YDP	Yuma Desalting Plant
YMCAS	Yuma Marine Corps Air Station

APPENDIX A

Appendix A

Arizona Water Protection Fund Projects in the Lower Colorado River Planning Area through 2005¹

LOWER COLORADO RIVER PLANNING AREA			
Groundwater Basin	AWPF Grant #	Project Title	Project Category
Parker	96-0016	‘Ahakhav Tribal Preserve	Habitat Restoration & Revegetation
Parker	97-032	‘Ahakhav Tribal Preserve – Deer Island Revegetation	Exotic Species Control & Revegetation
Yuma	96-0011	Lower Colorado River – Imperial Division Restoration	Wetland Restoration
Yuma	96-0023	Watershed Restoration at the Yuma Conservation Gardens	Watershed Restoration
Yuma	04-124	Yuma East Wetlands Riparian Revegetation Project	Exotic Species Control & Revegetation
Yuma	05-134	Quechan Indian Nation Yuma East Wetlands Restoration Project – Phase I	Exotic Species Control & Revegetation

Source: ADWR, 2005, Water Protection Fund database: Office of Statewide Planning

¹ A map with all Arizona Water Protection Fund grant locations can be found in Volume 1, Appendix C

APPENDIX B

Arizona Colorado River Water Use: Present Perfected Right Holders and Priority 1-6 Contractors in the Lower Colorado River Planning Area

Entity	Type of Entitlement	Priority Date	Annual Diversion Entitlement (Acre-Feet) ¹	Annual Consumptive Use Entitlement (Acre-Feet) ¹
PRIORITY 1				
Satisfaction of Present Perfected Rights (PPRs) as defined and provided for in the <i>Arizona v. California</i> Decree (2006 Consolidated).				
Federal				
Cocopah Indian Reservation	PPR No. 1	9/27/1917	7,681	
	PPR No. 8	1915	1,140	
	Total		8,821	
Colorado River Indian Tribes Reservation	PPR No. 2	3/3/1865	358,400	
		11/22/1873	252,016	
		11/16/1874	51,986	
	Total		662,402	
Fort Mojave Indian Reservation	PPR No. 3	9/18/1890	27,969	
		2/2/1911	75,566	
	Total		103,535	
Fort Yuma Indian Reservation	PPR No. 3a	1/9/1884	6,350	
Total			781,108	
Water Projects				
Yuma County Water Users' Association (<i>also has unquantified water right certificates</i>)	PPR No. 4	1901	254,200	
Unit "B" Irrigation and Drainage District (<i>also has unquantified water right certificates</i>)	PPR No. 5	7/8/1905	6,800	
North Gila Valley Irrigation District (<i>also has 3rd Priority consumptive use entitlement of 41,203 AF</i>)	PPR No. 6	7/8/1905	24,500	
Total			285,500	
Miscellaneous PPRs				
Powers	PPR No. 7	1915	960	
Brooke Water LLC (<i>also has 440 AF of 4th priority water - Contract No. 5-XX-30-W044</i>)	PPR No. 9	1910	360	
Hulet (<i>located in MVIDD service area</i>)	PPR No. 10	1902	1,080	
Hoover (formerly Hopal) (<i>located in MVIDD service area</i>)	PPR No. 11 Contract No. 4-07-30-W0052	1902	1,050	
Miller (<i>located in MVIDD area</i>)	PPR No. 12	1902	240	
McKellips/Granite Reef Farms (<i>located in MVIDD service area</i>)	PPR No. 13	1902	810	
Sherill and Lafollette (<i>located in MVIDD service area</i>)	PPR No. 14	1902	1,080	
Molina	PPR No. 15	1928	318	
Gila Monster Farms, Inc. (<i>also has 6,285 AF of 3rd priority, 1,435 AF of 4th priority, 656 AF of 5th priority and an undetermined amount of 6th priority water - Contract No. 6-07-30-W0337</i>)	PPR No. 16	1925	780	
Zozoya (<i>located in MVIDD service area</i>)	PPR No. 17	1912	720	
Swan (<i>located in MVIDD service area</i>)	PPR No. 18	1902	960	
Phillips, Milton and Jean	PPR No. 19	1900	42	
Parker, Town of (<i>also has 1,030 AF of 4th priority and 2,000 AF of 5th and/or 6th priority water</i>)	PPR No. 20	1905	630	400
Yuma, City of (<i>also has a 3rd Priority consumptive use entitlement 48,522 AF</i>)	PPR No. 21	1893	2,333	1,478
Total			11,363	1,878

¹ For Priorities 1 through 3 and Priorities 5 and 6, the totals for diversion and consumptive use entitlements **are not** additive.

Entity	Type of Entitlement	Priority Date	Annual Diversion Entitlement (Acre-Feet) ¹	Annual Consumptive Use Entitlement (Acre-Feet) ¹
PRIORITIES 2 and 3				
Second and third priorities are coequal.				
Priority 2 - Satisfaction of Federal Reservations and Perfected Rights established or effective prior to September 30, 1968				
Priority 3 - Satisfaction of Entitlements pursuant to contracts between the United States and water users in Arizona executed on or before September 30, 1968				
Federal				
Ak-Chin Indian Community	AK-CHIN121180A	1/1/1956	50,000	
Cibola National Wildlife Refuge	Secretarial Reservation	8/21/1964	34,500	16,793
Department of the Navy - Marine Corps Air Station - Yuma	Contract No. 14-06-300-937	1/1/1959	3,000	
Department of the Army - Yuma Proving Grounds	Contract No. I76r-696	6/12/1951	1,129	
Havasu National Wildlife Refuge	1964 Supreme Court Decree Exec Order No. 8647/Public Land Order No. 559	1/22/1941 2/11/1949	41,839	37,339
Imperial National Wildlife Refuge	1964 Supreme Court Decree	2/14/1941	28,000	23,000
Lake Mead National Recreation Area - National Park Service	Executive Order No. 5105 Executive Order No. 5339	5/3/1929 4/25/1930	Annual quantities reasonably necessary to fulfill the purpose of the Recreation Area	
Salt River Pima Maricopa Indian Community	SRPMIC021288N	3/4/1952	22,000	
Lower Colorado River Dams Project - United States Bureau of Reclamation - Davis Dam	Secretarial Reservation dated November 29, 2000	4/26/1941	100	
Total			180,568	77,132
Water Projects				
Unit "B" Irrigation and Drainage District (<i>also has PPR for 6,800 AF</i>)	Water right certificates Contract No. 14-06-300-44	12/22/1952	Unquantified water right certificates	
North Gila Valley Irrigation District (<i>also has a PPR for 24,500 AF</i>)	Contract Nos. 14-06-W-54 14-06-W-102 14-06-300-1270	1/1/1956		41,203
Yuma Irrigation District	(<i>These 3 Districts share a consumptive use entitlement of 250,000 AF, which was allocated to each District by Reclamation on December 27, 2001</i>)			67,278
Yuma Mesa Irrigation and Drainage District				141,519
Wellton-Mohawk Irrigation and Drainage District	Contract No. 1-07-30-W0021	3/4/1952		278,000
Yuma County Water Users' Association (<i>also has a PPR for 254,200 AF</i>)	Water right certificates Contract No. 14-06-300-621	4/1/1957	Unquantified water right certificates	
Total				528,000
Others				
Arizona, University of	Contract No. 14-06-300-144	1/1/1954	1,088	
C. Allec Company, Inc. (formerly Allec, Camille)	Contract No. 14-06-303-528	12/23/1953	120	
Desert Lawn Memorial Park Association (Cemetery in Yuma) (<i>also has 360 AF of 4th priority water for undeveloped land near Unit B</i>)	Contract No. 14-06-303-1079	5/1/1956	200	
Gila Monster Farms, Inc. (<i>also has 780 AF of 1st priority, 1,435 AF of 4th priority and 656 AF of 5th priority and an undetermined amount of 6th priority water</i>)	Contract No. 6-07-30-W0337	1/1/1952	6,285	
Kaman, Inc.	Contract No. 14-06-303-1555	12/2/1959	2	
Union Pacific Railroad Company (<i>formerly Southern Pacific Railroad Company</i>)	Contract No. 14-06-303-1524	12/21/1959	48	
Yuma, City of (<i>also has a PPR for 1,478 AF consumptive use</i>)	Contract No. 14-06-W-106	11/12/1959		48,522
Yuma, City of (<i>Cemetery</i>)	Contract No. 14-06-303-1078	5/1/1956	60	
Yuma Mesa Fruit Growers Association	Contract No. 14-06-303-1196	1/1/1956	15	
Yuma Union High School	Contract No. 14-06-303-179	5/3/1960	200	
Total			8,018	48,522

Entity	Type of Entitlement	Priority Date	Annual Diversion Entitlement (Acre-Feet) ¹	Annual Consumptive Use Entitlement (Acre-Feet) ¹
PRIORITY 4				
Satisfaction of Entitlements pursuant to: (i) contracts, Secretarial Reservations, and other arrangements between the United States and water users in the State of Arizona entered into or established subsequent to September 30, 1968, for use on Federal, State, or privately owned lands in the State of Arizona (for a total quantity of not to exceed 164,652 acre-feet of diversions annually); and (ii) Contract No. 14-06-W-245 dated December 15, 1972, as amended, between the United States and the Central Arizona Water Conservation District for the delivery of Mainstream Water for the Central Arizona Project, including use of Mainstream Water on Indian lands.				
Municipal and Industrial				
Arizona-American Water Company (Havasú) (also has a lease with the MCWA for 950 AF of 5th priority water)	Contract No. 00-XX-30-W0391	1/23/2001	1,420	
Arizona Game and Fish Commission (entitlement is available for domestic & irrigation use. Also has 750 AF of fifth priority and 1,000 AF of sixth priority water)	Contract No. 07-XX-30-W0509	9/25/2007	1,419	
Arizona State Land Department	Contract No. 7-07-30-W0358	2/2/2004	1,534	
Arizona State Parks Board / Windsor Beach	Contract No. 7-07-30-W0364	8/17/1998	90	
B & F Investments, LLC	Contract No. 06-XX-30-W0453	10/25/2006	60	
Brooke Water LLC (also has a PPR for 360 AF)	Contract No. 5-XX-30-W044	11/9/1983	440	
Bullhead City (also has a subcontract with MCWA for 6,000 AF of 4th priority water & is in the process of acquiring a second subcontract for 2,139 AF)	Contract No. 2-07-30-W0273	11/9/1994	15,210	
Bureau of Land Management	Secretarial Reservations and IGA No. 8-07-30-W0373	8/30/1973		800
		9/29/1981		1,280
		4/27/1987		1,930
		6/13/2000		
		Total		4,010
Central Arizona Water Conservation District (CAP) (Balance of Arizona Colorado River allocation, approximately 1.5 MAF/Year)	Contract No. 14-06-W-245	12/01/1988		
Crystal Beach Water Conservation District	Contract No. 6-07-30-W0352	11/21/1997	132	
Desert Lawn Memorial Park Association (Cemetery in Yuma) (also has 200 AF of 3rd priority water)	Contract No. 14-06-300-2587	5/30/1975	360	
Ehrenberg Improvement Association	Contract No. 8-07-30-W0006	10/14/1977	500	
Fisher Landing Water and Sewer	Contract No. 06-XX-30-W0450	12/21/2006	53	
Gold Dome Mining Company	Contract No. 0-07-30-W0250	6/6/1990	7	
Gold Standard Mines Corporation	Contract No. 3-07-30-W0038	8/25/1983	75	
Golden Shores Water Conservation District	Contract No. 9-07-30-W0203	6/1/1989	2,000	
Hillcrest Water Company	Contract No. 5-07-30-W0078	3/8/1985	84	
Lake Havasu City (also has unspecified amount of 5th and/or 6th priority water, and a subcontract with MCWA for 6,000 AF of 4th priority water. It is in the process of acquiring a second subcontract for 2,139 AF)	Contract No. 3-07-30-W0039	10/4/1995	19,180	
Marble Canyon Company, Inc. (also has an unspecified amount of 5th and 6th priority water)	Contract No. 5-07-30-W0322	5/1/1996	70	
McAllister, Maurice L.	Contract No. 7-07-30-W0355	7/31/1998	40	
Mohave County Water Authority (Has 15,000 AF subcontracted to: Lake Havasu and Bullhead cities - 6,000 AF each; Mohave Water Conservation District - 3,000 AF. MCWA also has an undefined entitlement of 5th and 6th priority water)	Contract No. 5-07-30-W0320	11/14/1968	18,500	
Mohave County Water Authority (entitlement is available for domestic and irrigation use in Cibola Valley and for domestic use in Mohave County. The Authority is in the process of subcontracting 2,139 AF of this water to both Bullhead City and Lake Havasu City)	Contract No. 4-XX-30-W0431	1/31/1983	4,578	
Mohave Valley Irrigation and Drainage District (part of the District's 41,000 AF entitlement - estimated M&I use based on USBR crop reports) (also has 2 leases with MCWA for a total of 980 AF of 5th priority water)	Contract No. 14-06-W-204	11/14/1968	8,000	

Entity	Type of Entitlement	Priority Date	Annual Diversion Entitlement (Acre-Feet) ¹	Annual Consumptive Use Entitlement (Acre-Feet) ¹
PRIORITY 4 (Continued)				
Municipal and Industrial (Continued)				
Mohave Water Conservation District (<i>also has a subcontract with the MCWA for 3,000 AF of 4th priority water</i>)	Contract No. 9-07-30-W0012	11/14/1968	1,800	
Parker, Town of (<i>also has a PPR for 630 acre-feet, and 2,000 acre-feet of Priority 5 and/or Priority 6 water</i>)	Contract No. 2-07-30-W0025	1/6/1998	1,030	
Quartzsite, Town of	Contract No. 7-07-30-W0353	1/28/1999	1,070	
Roy, Edward P.	Contract No. 9-07-30-W0124	2/24/1986	1	
Smucker Park	Contract No. 14-06-303-2702	11/12/1969	33	
Somerton, City of	Contract No. 3-XX-30-W0419	2/8/2006	750	
Verizon California, Inc. (formerly Continental Telephone of California)	Contract No. 14-06-300-2506	2/5/1974	1	
Water reserved by the Secretary for use in Indian settlements			3,500	
Total			81,937	4,010
Municipal and Industrial Recommendations				
Arizona State Parks Board / Contact Point			20	
Martinez Lake cabin sites - (<i>had 87 AF of which 53 AF was allocated to Fisher Water and Sewer; 8 AF to Shepard Water; and 3 AF to ASLD</i>)			23	
Shepard Water Company			50	
Total			93	
Agricultural				
Arizona State Land Department (<i>also has 9,097 AF of 5th and/or 6th priority water</i>)	Contract No. 4-07-30-W0317	6/28/1999	6,607	
Beattie Farms Southwest	Contract No. 5-XX-30-W0446	2/17/2006	1,110	
Cibola Valley Irrigation and Drainage District (<i>includes 300 AF for M&I use and also has 1,500 AF of 5th priority and 2,000 AF of 6th priority water</i>)	Contract No. 2-07-30-W0028	1/31/1983	12,066	
Cocopah Indian Reservation (<i>lands south of Morelos Dam</i>)	Contract No. 6-07-30-W0346 Supreme Court Decree	6/24/1974	2,026	
Curtis, Armon	Contract No. 3-07-30-W0037	8/29/1983	300	
Gila Monster Farms, Inc. (<i>also has a PPR for 780 AF, 6,285 AF of 3rd priority, 656 AF of 5th priority and an undetermined amount of 6th priority water</i>)	Contract No. 6-07-30-W0337 PPR No. 16	7/28/1997	1,435	
Hopi Tribe (<i>also has 750 AF of 5th priority and 1,000 AF of 6th priority water</i>)	Contract No. 4-XX-30-W0432	1/31/1983	5,997	
JRJ Partners LLC (<i>formerly part of Dulin Farms</i>)	Contract No. 06-XX-30-W0448	9/25/2007	1,080	
Mohave Valley Irrigation and Drainage District (<i>the 41,000 AF entitlement less 8,000 AF for M&I uses and PPR's for 5,940 AF</i>)	Contract No. 14-06-W-204	11/14/1968	27,060	
North Baja, LLC (<i>formerly Jamar Produce</i>) (<i>408 AF for agricultural use; 72 AF for M&I use</i>)	Contract No. 5-07-30-W0066	12/3/1984	480	
George Ogram, Ogram Farms	Contract No. 1-XX-30-W0398	9/4/2003	480	
Ogram Boys Enterprises (<i>formerly known as GOBO Farms</i>)	Contract No. 4-XX-30-W0402	7/1/2005	924	
Pasquinelli, Gary J. (<i>Hall contract assigned and amended from 510 to 486 AF</i>)	Contract No. 5-07-30-W0065	3/27/2003	486	
Rayner Ranches	Contract No. 5-07-30-W0064	10/29/1984	4,500	
Total			64,551	
Agricultural Recommendations				
CHA CHA, LLC (<i>Amended contract includes: Auza Farms - 960 AF, Dulin Farms-West portion - 936 AF, and Youmans - 204 AF</i>)			2,100	
Peach, John (<i>formerly Bruce Church</i>)			456	
Phillips, Milton and Jean			18	
Total			2,574	

Entity	Type of Entitlement	Priority Date	Annual Diversion Entitlement (Acre-Feet) ¹	Annual Consumptive Use Entitlement (Acre-Feet) ¹
PRIORITY 5 AND 6				
Priority 5 - Satisfaction of Entitlements to any Unused Arizona Entitlement				
Priority 6 - Satisfaction of Entitlements to Surplus Apportionment Water				
Priority 5				
Arizona Game and Fish Commission (also has 1,419 AF of fourth priority and 1,000 AF of sixth priority water)	Contract No. 07-XX-30-W0509	9/25/2007	750	
Cibola Valley Irrigation and Drainage District (also has 12,066 acre-feet of 4th priority water and 2,000 AF of 6th Priority water)	Contract No. 2-07-30-W0028	1/31/1983	1,500	
Hopi Tribe (also has 5,997 AF of 4th Priority water and 1,000 AF of 6th Priority water)	Contract No. 04-XX-30-W0432	1/31/1983	750	
Gila Monster Farms, Inc. - 5th priority (also has a PPR for 780 AF, 6,285 AF of 3rd priority, 1,435 AF of 4th priority water)	Contract No. 6-07-30-W0337	7/28/1997	656	
Priority 5 and/or 6				
Arizona Public Service (Yucca Power Plant)	Contract No. 6-07-30-W0336	10/3/2000	1,500	
Arizona State Land Department (also has 6,607 acre-feet of 4th priority water)	Contract No. 4-07-30-W0317	6/28/1999	9,067	
Lake Havasu City (also has 19,180 AF of 4th Priority water)	Contract No. 3-07-30-W0039	10/04/1995	unspecified	
Marble Canyon Corporation (also has 70 AF of 4th priority water)	Contract No. 3-07-30-W0322	5/01/1996	unspecified	
Mohave County Water Authority - Entitlement leased to: MVIDD (Marina Coves) - 600 AF MVIDD (Bella Vista/Los Lagos) - 380 AF AZ-American Water Co.(The Refuge) - 950 AF	Contract No. 5-07-30-W0320	1/31/1983	unspecified	
Parker, Town of (also has PPR for 630 AF and 1,030 AF of 4th priority)	Contract No. 2-07-30-W0025	1/6/1998	2,000	
Priority 6				
Arizona Game and Fish Commission (also has 1,419 AF of fourth priority and 750 AF of fifth priority water)	Contract No. 07-XX-30-W0509	9/25/2007	1,000	
Cibola Valley Irrigation and Drainage District (also has 12,066 AF of 4th Priority water and 1,500 AF of 5th priority water)	Contract No. 2-07-30-W0028	1/31/1983	2,000	
Gila Monster Farms, Inc. - 6th priority (also has a PPR for 780 AF, 6,285 AF of 3rd priority, 1,435 AF of 4th priority)	Contract No. 6-07-30-W0337	7/28/1997	unspecified	
Hopi Tribe (also has 5,997 AF of 4th Priority water and 750 AF of 5th Priority water)	Contract No. 04-XX-30-W0432	1/31/1983	1,000	
Total			20,223	
Priority 1 Total			1,077,971	1,878
Priority 2 and 3 Total			188,586	653,654
Priority 1, 2, and 3 Total			1,266,557	655,532
Priority 4 Total			149,155	4,010
Priorities 1 through 4 Total			1,415,712	659,542
Priorities 5 and 6 Total			20,223	0

Entity	Type of Entitlement	Priority Date	Annual Diversion Entitlement (Acre-Feet)	Annual Consumptive Use Entitlement (Acre-Feet)
PRIORITY 5 AND 6				
Priority 5, Satisfaction of Entitlements to any Unused Arizona Entitlement Priority 6, Satisfaction of Entitlements to Surplus Apportionment Water				
Priority 5				
Arizona Game and Fish Department <i>(also has 1,419 AF of fourth priority and 1,000 AF of sixth priority water)</i>	Contract No. 07-XX-30-W0509	9/25/2007	750	
Cibola Valley Irrigation and Drainage District - 5th priority <i>(also has 12,066 acre-feet of 4th priority water)</i>	Contract No. 2-07-30-W0028	1/31/1983	1,500	
Hopi Tribe - 5th priority	Contract No. 04-XX-30-W0432	1/31/1983	750	
Gila Monster Farms, Inc. - 5th priority <i>(also has 1,435 AF of 4th priority water)</i>	Contract No. 6-07-30-W0337	7/28/1997	656	
Priority 5 and/or 6				
Arizona Public Service (Yucca Power Plant)	Contract No. 6-07-30-W0336	10/3/2000	1,500	
Arizona State Land Department <i>(also has 6,607 acre-feet of 4th priority water)</i>	Contract No. 4-07-30-W0317	6/28/1999	9,067	
Lake Havasu, City of	Contract No. 3-07-30-W0039	10/04/1995	unspecified	
Marble Canyon Corporation <i>(also has 70 AF of 4th priority water)</i>	Contract No. 3-07-30-W0322		unspecified	
Mohave County Water Authority - Entitlement leased to: MVIDD (Marina Coves) - 600 AF MVIDD (Bella Vista/Los Lagos) - 380 AF AZ-American Water Co.(The Refuge) - 950 AF	Contract No. 5-07-30-W0320	1/31/1983	unspecified	
Parker, Town of <i>(also has 1,030 AF of 4th priority water)</i>	Contract No. 2-07-30-W0025	1/6/1998	2,000	
Priority 6				
Arizona Game and Fish Department <i>(also has 1,419 AF of fourth priority and 750 AF of fifth priority)</i>	Contract No. 07-XX-30-W0509	9/25/2007	1,000	
Cibola Valley Irrigation and Drainage District	Contract No. 2-07-30-W0028	1/31/1983	2,000	
Gila Monster Farms, Inc. - 6th priority <i>(also has a PPR for 780 AF, 6,285 AF of 3rd priority, 1,435 AF of 4th priority)</i>	Contract No. 6-07-30-W0337	7/28/1997	unspecified	
Hopi Tribe - 6th priority	Contract No. 04-XX-30-W0432	1/31/1983	1,000	
Total: Priority 5 and 6			20,223	

APPENDIX C

APPENDIX C

Colorado River Management

The “Law of the River” as described briefly below, is a collection of federal and state laws, interstate compacts, Supreme Court decisions and international treaties that govern the operation and use of the Colorado River. In the Lower Colorado River Basin, the United States Secretary of the Interior (Secretary) is the Watermaster. Acting through the Bureau of Reclamation, the Secretary operates Colorado River dams and accounts for water use on an annual basis. Pursuant to Section V of the Boulder Canyon Project Act, the Secretary contracts with water users in the Lower Basin for water up to the total amount of each state’s apportionment.

Colorado River Compact – 1922

In 1921, the seven Colorado River Basin states authorized the appointment of commissioners to negotiate a compact for the apportionment of the water supply of the Colorado River. Although the states were unable to negotiate an allocation of water for each state, an agreement was signed in November 1922, the Colorado River Compact (Compact) that divided the Colorado River Basin into the Upper Basin and the Lower Basin.

The Compact apportioned to the Upper Basin (Colorado, New Mexico, Utah, and a portion of Arizona) and to the Lower Basin (Arizona, California, and Nevada) the exclusive beneficial consumptive use of 7.5 million acre-feet of water to each basin annually. Because the Colorado River Basin includes a portion of Mexico, the Compact recognized Mexico’s right to use River water. Water for this purpose was to be met from surplus water supplies in excess of the amounts apportioned to the Upper and Lower Basins. Any burden that might arise because of a water treaty with Mexico was to be shared equally by the two basins. The Compact recognized that the ability of the Upper Basin to meet the requirement to deliver 7.5 million acre-feet to the Lower Basin could be impacted by climatic factors, therefore the Compact only required the Upper Basin to restrict its use so that delivery to the Lower Basin would not be depleted below an aggregate of 75,000,000 acre-feet for any period of ten consecutive years.

Boulder Canyon Project Act - 1928

The Boulder Canyon Project Act (Project Act) authorized construction of the Hoover Dam and Power Plant and the All-American Canal. It also authorized Arizona, California and Nevada to enter into an agreement whereby the 7.5 million acre-feet of water apportioned to the Lower Basin by the Colorado River Compact would be apportioned as follows: to California, 4.4 million acre-feet per year; to Arizona, 2.8 million acre-feet per year; and to Nevada, 0.3 million acre-feet per year.

Mexican Treaty – 1945

In 1945, a treaty between the United States and Mexico involving waters of the Colorado, Rio Grande and Tijuana Rivers was enacted to address, among other things, a fixed entitlement for Mexico of 1.5 million acre-feet annually from the Colorado River. The Treaty also provided

an additional 200,000 acre-feet in years of supply surplus. In years of extraordinary drought, Mexico's entitlement is to be reduced in the same proportion as consumptive uses in the U.S. are reduced.

Minute 242 was adopted and executed in 1973 in response to Mexico's concerns regarding the quality of Colorado River water being delivered to the Mexicali Valley. Minute 242 obligates the United States to implement measures that will maintain the salinity of the Colorado River waters delivered to Mexico at nearly the same quality as that diverted at Imperial Dam for use within the United States. The Colorado River Basin Salinity Control Act was signed into law on June 24, 1974, providing for the physical works necessary to implement Minute 242 without permanent loss of water to the Colorado River Basin states.

Upper Colorado River Basin Compact - 1948

This Compact divided the water apportioned to the Upper Basin by the Colorado River Compact between the five states with territory in the Upper Basin. Arizona was allocated 50,000 acre-feet per year with the remainder of the Upper Basin entitlement divided according to the following percentages: Colorado, 51.75; New Mexico, 11.25; Utah, 23.00; and Wyoming, 14.00.

Arizona v. California - 1964

On August 13, 1952, the State of Arizona filed a complaint with the U.S. Supreme Court against California and seven agencies within that state to resolve the contention by California that the Central Arizona Project should not be authorized. At California's insistence, the U.S. Congress would not authorize the Central Arizona Project until Arizona's right to the necessary Colorado River entitlement was clarified.

The Decree, handed down in 1964, confirmed that Congress had already apportioned, through the Boulder Canyon Project Act, the entitlement of water to the three Lower Basin states as follows: Arizona, 2.8 million acre-feet; California, 4.4 million acre-feet; and Nevada, 300,000 acre-feet. Any surplus above 7.5 million acre-feet was apportioned 50 percent to California and 50 percent to Arizona, except that Nevada was given the right to contract for 4 percent of the excess, which would come out of Arizona's share. The Decree also confirmed each of the Lower Basin state's entitlements to the flow of the tributaries within their boundaries, supporting Arizona's utilization of water from its in-state rivers, separate from its entitlement to its full 2.8 million acre-feet of Colorado River water.

The Decree left shortage allocation to the discretion of the Secretary after providing for satisfaction of present perfected rights in the order of their priority dates. These rights were defined as rights existing and used prior to the effective date of the Boulder Canyon Project Act.

Colorado River Basin Project Act - 1968

The Colorado River Basin Project Act on September 30, 1968 authorized construction of the Central Arizona Project and other water development projects in the Upper Basin. A significant

concession was a provision that allowed existing California, Arizona, and Nevada Colorado River contractors to receive a priority over the Central Arizona project in times when the useable supply from the River was inadequate to provide 7.5 million acre-feet to the Lower Basin states, with California's priority limited to its 4.4 million acre-foot entitlement.

The Act directed the Secretary to propose criteria for the “coordinated long-range operation of the reservoirs” in the Upper Basin with the operation of the reservoirs in the Lower Basin. To accomplish this, the Act required the development of an Annual Operating Plan, in consultation with representatives of the seven Basin states.

Current Colorado River Issues

Shortage Criteria

In December 2007, the Secretary of the Interior signed the Record of Decision (ROD) on interim operating criteria (2008-2026) including the coordinated operation of Lakes Powell and Mead and criteria for implementing shortage reductions in the Lower Basin. At this time Lake Powell and Lake Mead are operated independently; annual Lake Powell water releases are determined based on applicable law and relevant factors contained in the Long-Range Operating Criteria. Proposed coordinated operation of the reservoirs would address two goals: avoid Lower Basin shortages and avoid curtailment of Upper Basin water use. If regional drought conditions continue shortage operations could begin as early as 2011.

In May 2005, Arizona water users asked ADWR to convene a stakeholder technical workgroup to develop a recommendation regarding appropriate Lower Basin shortage criteria and a strategy for apportioning shortage reductions between the Central Arizona Project (CAP) and equivalent priority mainstream Colorado River water users. In October, 2006 the Workgroup forwarded their recommendation to the Director, and with minor modifications it has been incorporated into the Reclamation Environmental Impact Study as part of the Basin States Alternative.

The modified shortage recommendation implements shortage reductions when Lake Mead water storage is depleted to key elevation triggers: In years when Lake Mead content is projected on January 1 to be at or below elevation 1075 ft and at or above 1050 ft, Arizona's share of shortage reductions would be 320,000 acre-feet, below 1050 ft and at or above 1025 ft, 400,000 acre-feet and below 1025 feet elevation, 480,000 acre-feet. Reclamation will reconsult with the states if conditions continue to worsen necessitating additional water supply reductions. The available shortage water supply would be apportioned within Arizona between the fourth priority mainstream water users and the CAP by first determining the mainstream available supply, based upon entitlement.

$$(\text{Total fourth priority mainstream diversion entitlement} \div \text{total fourth priority water supply before shortage reduction}) \times (\text{total fourth priority water supply} - \text{shortage reduction volume})$$

The remaining fourth priority water supply after deducting the mainstream supply would be

available for diversion by the CAP.

Entitlement Transfers

Arizona communities along the Colorado River have experienced explosive growth over the last decade. These Arizona communities are unique because groundwater is not readily available as a supplementary water supply to meet this growing demand. Regardless of whether Colorado River water is diverted from the mainstream or pumped from wells that are hydraulically connected to the river, the water is legally Colorado River water, and annual use is limited to a defined, maximum amount.

The Boulder Canyon Project Act requires U.S. Colorado River water users in the Lower Basin to have a contract for such water with the Secretary of the Interior. The Regional Director of Reclamation contracts with Lower Basin water users on behalf of the Secretary. The Supreme Court Decree in *Arizona v. California* requires Reclamation to account annually for all diversions and use of Colorado River water against the total Arizona allocation of 2.8 million acre-feet.

To meet this growing domestic demand, some Colorado River communities have acquired, transferred and changed the type of use of existing agricultural water entitlements. For non-federal Arizona contractors of mainstream Colorado River entitlements, these transfer actions are subject to review by the ADWR and consultation with ADWR and Reclamation. The Department has developed a substantive policy statement titled *Policy and Procedures for Transferring an Entitlement of Colorado River Water* that provides information regarding the Department's review of a proposed transfer action. This policy is available on the Department's website at www.azwater.gov. To date, using its substantive policy statement, the Department has made three assignment and two conveyance recommendations involving agricultural water entitlements. The Department is currently experiencing increasing contact from entities that are interested in the acquisition and conversion of agricultural entitlements to municipal and industrial uses and it expects to process additional contract transfer requests in the future.

A separate substantive policy statement governs the transfer of CAP subcontract entitlements within the three county CAP service area. The *Revised Policy Regarding Transfer of Central Arizona Project Municipal and Industrial Water Subcontract Entitlements* describes the criteria the Department evaluates and the priority of proposed transfer actions. Growth in the CAP service area has resulted in increased use of existing CAP subcontract water, and the Department expects few future transfer action proposals.

Lower Colorado River Planning Area Entitlement Transfer Actions

The following are a list of assignment and conveyances that have been conducted in accordance with the Department's Colorado River transfer policy that affects entities in the Lower Colorado River Planning Area. All involve a series of assignments and conveyances that began with the initial partial assignment of Cibola Valley Irrigation and Drainage District's entitlement in 2004. In 2007, one assignment and one conveyance action occurred, in the planning area. See Appendix B for a complete list of Colorado River entitlements within the planning area.

1. 2004 - Cibola Valley Irrigation and Drainage District (CVIDD), located in the southern

part of the Parker Basin, **assigned** 5,995 acre-feet of 4th priority, 750 acre-feet of fifth priority and 1,000 acre-feet of sixth priority irrigation entitlements to both the Mohave County Water Authority (MCWA) and to The Hopi Tribe.

2. 2007 – CVIDD **assigned** another 60 acre-feet of its 4th priority entitlement to Cibola Resources. Cibola Resources then **conveyed** the 60 acre-feet to B&F Investments for use by a proposed travel plaza to be located in the Ehrenberg area.

3. 2007 - MCWA **conveyed** 4,578 acre-feet of its 4th priority entitlement for eventual M&I use by Lake Havasu and Bullhead City

4. 2007 – MCWA **assigned** 1,419 acre-feet of its 4th priority and all of its 5th and 6th priority entitlements to the Arizona Game and Fish Commission for habitat restoration purposes in the Cibola Valley

Note:

Assignments: Entitlement is assigned to a new entity, the type and place of use remain the same.

Conveyances: Entitlement may or may not be transferred to a new entity, but the place of use and/or the type of use is changed.

Inadvertent Overrun and Payback Policy

In October 2003, the Secretary of the Interior signed the Record of Decision to implement the Colorado River Water Delivery Agreement (WDA). The WDA includes the Inadvertent Overrun and Payback Policy (IOPP) to identify inadvertent overruns and to establish procedures to account for overruns and define subsequent payback requirements for Colorado River water users in the Lower Basin.

Inadvertent overruns occur when Colorado River water is diverted, pumped or received by an entitlement holder in excess of the water user's entitlement for that year. The IOPP creates a process and criteria to structure payback of the amount of water received in excess of the entitlement for that year.

Federal Rulemaking to Establish the Accounting Surface

In August 2006, Reclamation initiated a rulemaking process to regulate the non-contract use of Colorado River water in the Lower Basin. The Boulder Canyon Project Act requires U.S. Colorado River water users in the Lower Basin to have a contract for such water with the Secretary of the Interior. The Regional Director of Reclamation contracts with Lower Basin water users on behalf of the Secretary. The Supreme Court Decree in Arizona v. California requires Reclamation to account annually for all diversions and use of Colorado River water against the total Arizona allocation of 2.8 million acre-feet.

The rulemaking is intended to ensure that all Colorado River water use is covered by an entitlement

and correctly accounted for within the state's apportionment. Reclamation has contracted with the U.S. Geological Survey, to document non-contract water uses in the Lower Basin. The rule will establish the methodology that Reclamation will use to determine if a well is pumping Colorado River water and will also establish an appeal process. At this time, approximately 11,500 acre-feet of unallocated fourth-priority Colorado River water is available for allocation. Some of this water will be allocated to existing uses, after currently uncontracted uses have been quantified. The inventory is expected to provide comprehensive information about existing water uses that need an entitlement. The Department will use this information to allocate the remaining supply for domestic purposes.

Yuma Desalting Plant Operations

One unintended consequence of utilizing Colorado River water for domestic and agricultural purposes has been the steady increase in the salinity of its waters. The salinity problem created international discord in the 1960's when crops in the Mexicali Valley were damaged by the high salinity of the Colorado River water used for irrigation. An amendment to the 1944 treaty with Mexico guaranteed that the treaty water delivery would be no more than 115 ppm (+/- 30 ppm) more saline than the water diverted at Imperial Dam.

To comply with this requirement, the U.S. implemented a number of measures including re-routing drainage water from the Wellton-Mohawk Irrigation and Drainage District (WMIDD), to the Cienega de Santa Clara in Mexico. The U.S. also built a \$250 million desalinization plant in Yuma to treat WMIDD drainage water, before returning it to the mainstream. The Yuma Desalinization Plant was completed in 1992, operated briefly in 1993 and then put on standby status until a recent "demonstration run" in 2007.

Wellton-Mohawk drainage water that is bypassed each year to the Cienega, is not counted against the total amount of Colorado River water that must be delivered under the terms of the Treaty. In dry years, this results in Lake Mead storage decreasing by approximately 100,000 acre-feet annually since the bypassed water must be "made-up" from storage in Lake Mead. Recently, the decrease in Lake Mead storage after more than a decade of drought has increased the risk of shortage to Arizona Colorado River water users.

Salinity

Increased salinity levels in the Colorado River affect agricultural, municipal and industrial users. Agricultural water users suffer economic damage due to reduced crop yields, added labor costs for irrigation management and added drainage requirements. Urban users must replace plumbing and water-using appliances more often, or spend money on water softeners or bottled water. Industrial users and water and wastewater treatment facilities incur reductions in the useful life of system infrastructure. Damages in the United States are estimated at \$330 million per year, and while economic damage in Mexico is not quantified it is also a significant concern.

In 1972, EPA required development of water quality standards for salinity in the Colorado River in accordance with Clean Water Act Section 303. The seven Colorado River Basin States formed the Colorado River Basin Salinity Control Forum (the Forum) in 1973. The Forum has developed

numeric salinity standards for three locations in the Lower Basin as well as a basin-wide plan of implementation. The EPA has approved the standards and the plan of implementation adopted by the Colorado River Basin States. The water quality standards establish a flow-weighted average annual salinity standard that must be maintained on the lower Colorado River at the following locations:

- Below Hoover Dam (to Parker Dam) - 723 mg/L
- Below Parker Dam (to Imperial Dam) - 747 mg/L
- At Imperial Dam - 879 mg/L

Implementation of the salinity control plan has ensured compliance with the numeric criteria while the Basin States continue to develop the water allocated to them by the Colorado River Compact. Millions of dollars have been spent to prevent 1.9 million tons of salt from entering the river.

Other Water Quality Issues

In 2005, the Governor of Arizona appointed The Clean Colorado River Alliance (Alliance) stakeholder group to address water quality issues for the Colorado River. In addition to salinity, the Alliance identified several other water quality concerns including nutrients, metals, endocrine disrupting compounds, perchlorate, bacteria and pathogens, and sediment. The Alliance issued a report titled Clean Colorado River Alliance Recommendations to Address Colorado River Water Quality, January 2006. The report includes a number of recommendations to monitor and mitigate the impacts of these pollutants.